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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/740,939	12/21/2000	Luc Francois Descamps	Q62126	7321

7590 01/02/2004

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Washington, DC 20037-3213

EXAMINER

TRAN, QUOC DUC

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 01/02/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/740,939

Applicant(s)

DESCAMPS ET AL.

Examiner

Quoc D Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 2,15-17 and 30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,18-29 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/740,939.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1,3-14, 18-29 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walence et al (6,466,649) in view of Cabot (5,649,304).

Consider claims 1 and 18, Walence et al teach a time domain reflectometry method and apparatus for determining properties of a transmission channel, comprising: generating, at one end of the channel, a plurality of pulses covering different frequency bands, and processing, as received signals, the echoes provided by the plurality of pulses at said one end of the channel (col. 1 lines 60-67; col. 2 lines 1-9).

Walence et al did not suggest wherein the generating is performed so that the frequency bands of adjacent ones of the plurality of pulses overlap. That is, generating a plurality of pulses simultaneously. However, Cabot suggested such (see summary; Fig. 2).

Therefore, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to incorporate the teaching of Cabot into view of Walence et al in order to improve test time.

Consider claims 3 and 20, Cabot teaches wherein the overlapping of the frequency bands is such that, after reflection and said processing, the frequency spectrum of the plurality of pulses is practically flat (col. 6 line 34 – col. 7 line 44).

Consider claim 4, Walance et al teach a method further comprising: providing each of the plurality of pulses with a given amplification or attenuation, and providing pulses of the received signals with the corresponding attenuation or amplification (col. 4 lines 36-67).

Consider claim 5, Walance et al teach a method further comprising subjecting the received signals to a synchronous averaging (col. 5 line 16 – col. 6 line 35).

Consider claim 6, Walance et al teach a method further comprising subjecting the received signals to a matched filtering (col. 5 line 16 – col. 6 line 35).

Consider claim 7, Walance et al teach a method further comprising suppressing noise, in medium and high frequency pulses of the received signals, by estimating the noise for the part of the received signal after the channel end echo, and determining a threshold above which the received signals are taken into consideration (col. 5 line 16 – col. 6 line 35).

Consider claim 8, Walance et al teach a method wherein the processing of the received signals is performed so that the received signals are processed in their own frequency bands, and then added (col. 5 line 16 – col. 6 line 35).

Consider claim 9, Walance et al teach a method further comprising detecting the variation with time of one or more of: the modulus of the received signals, and the frequency of the received signals (col. 5 line 16 – col. 6 line 35).

Consider claim 10, Walance et al teach a method wherein the generating of the plurality of pulses is performed so as to generate complex analytical pulses (col. 4 lines 50-67).

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Consider claim 11. Walance et al teach a method further comprising selecting the frequency bandwidth and the amplitude of low frequency pulses of the received signals according to the channel attenuation and its compliancy in terms of egress (col. 4 lines 50-67).

Consider claim 12, Walance et al teach a method wherein the plurality of pulses are generated sequentially or simultaneously (col. 5 lines 1-15).

Consider claim 13, Walance et al teach a method wherein at least one of said properties being determined comprises the locations of defects of the channel (col. 7 lines 32-59).

Consider claim 14, Walance et al teach a method wherein said transmission channel comprises a telephone line between a central office and a subscriber, and the processing of the received signals is performed at the central office (col. 1 lines 60-67; Fig. 1).

Consider claim 31, Walance et al teach an apparatus and method wherein said transmission channels are telephone lines comprising copper pairs between a central office and a subscriber, and further comprising a time domain reflectometry test circuit (col. 1 lines 60-67; Fig. 1).

Consider claim 19, Cabot teaches wherein the different frequency bands are overlapping (col. 6 line 34 – col. 7 line 44).

Consider claim 21, Walance et al teach an apparatus wherein the pulse generator includes amplification or attenuation for each generated pulse, and said apparatus includes complementary attenuation or amplification for each received pulse (col. 4 lines 36-67).

Consider claim 22, Walance et al teach an apparatus further comprising a synchronous averager for the received signals (col. 5 line 16 – col. 6 line 35).

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Consider claim 23, Walance et al teach an apparatus further comprising a matched filter for the received signals (col. 5 line 16 – col. 6 line 35).

Consider claim 24, Walance et al teach an apparatus further comprising amplification or attenuation for each generated pulse and complementary attenuation or amplification for each received pulse (col. 5 line 16 – col. 6 line 35).

Consider claim 25, Walance et al teach an apparatus further comprising a processor processing the received signals for each frequency band and an adder adding the processed signals (col. 5 line 16 – col. 6 line 35).

Consider claim 26, Walance et al teach an apparatus further comprising a detector detecting the modulus of the received signals and/or the variation with time of the frequency of the received signals (col. 5 line 16 – col. 6 line 35).

Consider claim 27, Walance et al teach an apparatus further comprising a receiver receiving complex analytical pulses (col. 4 lines 50-67).

Consider claim 28, Walance et al teach an apparatus further comprising a selector selecting the frequency bandwidth and the amplitude of the low frequency pulses according to the line attenuation and its compliancy in terms of egress (col. 4 lines 50-67).

Consider claim 29, Walance et al teach an apparatus wherein said pulse generator generates the pulses sequentially or simultaneously (col. 5 lines 1-15).

Response to Arguments

3. Applicant's arguments with respect to claims 1,3-14,18-29 and 31 have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

6. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Facsimile responses should be faxed to:

(703) 872-9306

Hand-delivered responses should be brought to:

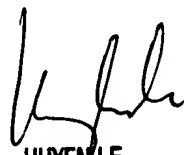
Crystal Park II, 2121 Crystal Drive
Arlington, VA., Sixth Floor (Receptionist)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Quoc Tran** whose telephone number is **(703) 306-5643**. The examiner can normally be reached on Monday-Thursday from 8:00 to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Curtis Kuntz**, can be reached on **(703) 305-4708**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600** whose telephone number is **(703) 306-0377**.

Quoc D. Tran
Patent Examiner AU 2643
December 22, 2003


HUYEN LE
PRIMARY EXAMINER